NAVAL WAR COLLEGE

Newport, Rhode Island

Command and Control

in

Domestic Maritime Disaster Response Operations

by

James J. Jones
Lieutenant Commander
United States Coast Guard

A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

Signature: 

5 February 2001

6

REPORT DOCUMENTATION PAGE

1. Report Security Classification: UNCLASSIFIED	
2. Security Classification Authority:	
3. Declassification/Downgrading Schedule:	
4. Distribution/Availability of Report: DISTRIBUTION STATEMENT A: APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED.	
5. Name of Performing Organization: JOINT MILITARY OPERATIONS DEPARTMENT	
6. Office Symbol: C	7. Address: NAVAL WAR COLLEGE 686 CUSHING ROAD NEWPORT, RI 02841-1207
8. Title (Include Security Classification): Command and Control in Maritime Disaster Response Operations (U)	
9. Personal Authors: LCDR J. J. Jones, USCG	
10. Type of Report: FINAL	11. Date of Report: 5 February 2000
12. Page Count: 26	12A Paper Advisor (if any): Dr. James F. Miskel

13. Supplementary Notation: A paper submitted to the Faculty of the NWC in partial satisfaction of the requirements of the JMO Department. The contents of this paper reflect my own personal views and are not necessarily endorsed by the NWC or the Department of the Navy.

14. Ten key words that relate to your paper:
Command and Control (C2); Maritime Disaster Response; Interagency Cooperation; Civil-Military Relations

15. Abstract:

The U.S. Coast Guard has responded to numerous maritime disasters in the last few years, which highlights the need for efficient command and control. These multi-agency, multi-jurisdictional domestic maritime disaster response operations (DMDRO) have reinforced the highly visible precedent that the federal government will assist local and state agencies whenever necessary. As this trend is likely to continue, action should be taken to promote efficient use of manpower and resources and prevent the ad hoc command and control arrangement that arises with each new DMDRO. This is an issue for the operational commander because it requires massive and immediate deployment of resources to offer the best hope of finding survivors and preserving evidence. DMDRO can affect civil-military relations, mission readiness, ability to respond to other crises, unit preparedness, budgets, etc. Thus, the operational commander must have a smoothly functioning command and control (C2) element to ensure that each phase of DMDRO is carried out safely and efficiently.

16. Distribution / Availability of Abstract:	Unclassified	Same As Rpt	DTIC Users
	X		

17. Abstract Security Classification: UNCLASSIFIED	
18. Name of Responsible Individual: CHAIRMAN, JOINT MILITARY OPERATIONS DEPARTMENT	
19. Telephone: 841-6461	20. Office Symbol: C

Security Classification of This Page Unclassified

Introduction

The United States Coast Guard (USCG), the nation's federal maritime emergency response agency, has responded to a number of major maritime disasters in the last few years, which have highlighted the need for efficient command and control (C2). These multi-agency, multi-jurisdictional domestic maritime disaster response operations (DMDRO) have reinforced a highly visible precedent of federal assistance in such cases. This precedent along with the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Public Law 93-288, as amended)[1] ensures that the federal government will respond to natural disasters and other incidents in order to assist local and state agencies whenever necessary. Therefore, action should be taken to promote efficient use of manpower and resources and prevent the *ad hoc* command and control arrangement that arises with each new DMDRO.

Domestic Maritime Disaster Response is an issue for the operational commander because it requires massive and immediate deployment of resources to offer the best hope of finding survivors and preserving evidence. Upon cessation of rescue efforts, the investigative process to determine the cause of the disaster and any criminal involvement often must be done in a similarly urgent fashion albeit with less tolerance for risk to personnel and equipment. Depending on how the operational commander is defined (USCG-District or Group Commander; USN-CINC or sub-unified commander; or NTSB lead investigator) DMDRO can affect civil-military relations, mission readiness, ability to respond to other crises, unit preparedness, budgets, etc. Thus, the operational commander must have a smoothly functioning C2 element to ensure that each phase of DMDRO is carried out safely and efficiently. Recent examples illustrate that this has not always been the case.

These recent examples of DMDRO include: three major passenger jet crashes (TWA Flight 800 in 1996, Egypt Air Flight 990 in 1999, and Alaska Airlines Flight 261 in 2000), one highly visible private plane crash (John F. Kennedy Jr. in 1999), and two vessel groundings (M/V NEW CARISSA off the Oregon coast in 1999 and the M/V EXXON VALDEZ in Prince William Sound, Alaska in 1989). While these are so-called "man-made" disasters, natural occurrences such as Hurricane Andrew and the Mississippi River floods have an obvious maritime component and often involve coordinated federal action. Since both man-made and natural disasters will inevitably continue to occur the federal government and particularly the military will continue to be called upon to provide assistance.

The precedent for federal assistance in domestic disaster response was set in the 1800's when the military was used to respond to disasters such as the Chicago fire of 1871. Later, in 1917, the War Department issued guidance on disaster relief.[2] As technology advanced throughout the 1900's the federal government and the military in particular became a place where states could turn to find abundant resources and modern equipment for disaster response. Events that would have remained regional or national at most began to receive international attention through routine air travel, a global economy, and a news media that reaches every corner of the globe. Local and state resources are quickly overwhelmed necessitating federal oversight and coordination when an oil tanker runs aground and spills 11 million gallons of crude oil or when a commercial passenger jet crashes with citizens from all over the world on board. Added to these developments is the recent increase in concern over the possibility of a weapon of mass destruction (WMD) being deployed in the United States. If such an attack were perpetrated from the sea such as an explosion in a major port like Los Angeles-Long Beach or next to a major

metropolitan area such as Manhattan, the military is almost solely qualified to mitigate the damage and provide assistance to the victims. Major Scott Taylor, Major Amy Rowe, and Commander Brian Lewis note in their article on WMD Consequence Management, "Recent experience suggests that our citizens want a swift and comprehensive [federal] response to disasters of all kinds."[3] While it is not the intent of this paper to address WMD, this is illustrative of how the federal government's role in disaster response is evolving thus reinforcing the precedent.

The operational commander must be prepared to respond to all types of disasters particularly those in the maritime domain since state and local governments have very limited ability to sustain operations at sea. Therefore, since C2 is such a vital component of any large-scale DMDRO, the operational commander needs to have clear doctrine to draw from as well as a solid understanding of the many variables, which come into play. A closer look at two of the cases mentioned, Egypt Air Flight 990 and Alaska Airlines Flight 261, will demonstrate shortcomings in the C2 system, point to some progress that has been made, and reveal some of the variables inherent in DMDRO.

"To the Navy, this was not a war. To the Coast Guard, it was."[4] This was the attitude of the USCG when Egypt Air Flight 990 crashed approximately 60 miles south of Nantucket Island, Massachusetts on 31 October 1999. This case, like TWA 800 three years before, rapidly escalated into a DMDRO. The U.S. Air Force (USAF) and the USCG initiated rescue efforts immediately with the USCG Group Commander in Woods Hole, Massachusetts assuming the duties of operational commander. The National Transportation Safety Board (NTSB) and Federal Bureau of Investigation (FBI) assumed investigative jurisdiction at the request of the Egyptian government. This request was necessary due to the International Civil Aviation Organization treaty which stipulates that

the country of registry has jurisdiction over aviation accidents in international waters.[5] As rescue efforts progressed the U.S. Navy (USN) formed Task Group 20.9 to assist in the search for survivors and to begin setting up for recovery and salvage operations.[6] An Incident Command Post was established at Naval Station Newport, Rhode Island to provide a base of operations. The operational commander encountered numerous C2 problems, which were noted in a comprehensive lessons learned database. After the following discussion on Alaska Airlines Flight 261, these lessons learned will be compared to those produced from the Alaska case.

Alaska Airlines Flight 261 crashed in the Pacific Ocean about nine miles off the coast of Port Hueneme, California on 31 January 2000. The USCG launched a search immediately and received assistance from many local boaters as well as county and state emergency response agencies. The USCG Group Commander out of Long Beach, California was designated operational commander and established Naval Construction Battalion Center Port Hueneme as the base of operations. Since the crash occurred in U.S. territorial waters the NTSB and FBI assumed responsibility for the safety related investigation and the potential criminal investigation, respectively. Commander, Third Fleet was tasked with providing salvage and recovery assets which were deployed from San Diego. Having had the opportunity to review after action reports from the TWA 800 and Egypt Air 990 operations, the operational commander in the Alaska Air 261 case implemented many of the lessons learned, but still experienced C2 problems that appear to be common in such cases.

Analysis

Egypt Air 990 and Alaska Air 261 were similar in many respects even though they occurred on different coasts, had different causes, and different players.[7] In both

cases the operational commander used the Incident Command System as a management tool and set up his Incident Command Post on a large USN facility. Both cases involved a large number of USCG and USN personnel and resources with NTSB as the lead investigative agency. The FBI also had a major interest in the Egypt Air 990 crash due to potential criminal involvement. These points are reiterated to stress the illustrative nature of the cases. Given these cases are typical of the courses of events and interactions that normally take place in DMDRO they permit certain conclusions to be drawn regarding their nature especially the command and control function that was present. To demonstrate these conclusions regarding C2 there are six factors to be considered. These are: organizational culture, rank structure, management systems, communications, locations, and stages. (Note: The main focus of this analysis will be the USCG and USN with some discussion of the NTSB as appropriate. The FBI will not be considered since it had a different degree of involvement in each of the cases. It is recognized that the FBI would assume a lead investigative role in the event a maritime disaster was the result of criminal activity.)

Organizational Culture – This is the first area where USCG, USN, and NTSB encounter difficulty in DMDRO. The USCG is a military organization with a search and rescue mission. The USCG C2 infrastructure, oriented toward a civilian fire/police dispatch model, is designed to handle the majority of maritime emergencies. This infrastructure contains all the elements of a typical emergency response agency, i.e. fully integrated long range communications, equipment and personnel in a 24-hour readiness status (includes vessels and aircraft), well-established standardized procedures, and a clear chain of command wherein the senior ranking person on scene is given a great deal of latitude in decision-making.[8] USCG culture also dictates that planning and exercising

for DMDRO occurs annually to bi-annually depending on the complexity of the geographic area.

The USN culture is similar to the USCG regarding maritime tradition. However, it is an organization in which the main focus is maritime power projection overseas. This focus on large-scale operations usually translates to bringing hundreds of people, several ships, and a large amount of equipment to the scene when the USN is called upon to participate in DMDRO. The people and equipment that deploy for DMDRO typically arrive with their own C2 structure, which usually includes higher-ranking officers, and a centralized decision-making system that limits the autonomy of the vessel and aircraft commanders at the scene of a disaster. This contrast to the USCG philosophy was noted in the following Egypt Air 990 Lessons Learned, "CG OSC's [On-Scene Commander] seem to have a greater degree of autonomy than our Navy counterparts."[9]

The NTSB, as the federal government's lead safety investigator in mass transportation related accidents, is very different from either the USCG or USN. As an agency led by board members requiring senate approval, the NTSB has a great deal of authority in DMDRO. To the casual observer this authority would appear disproportionate to the small number of people NTSB deploys to the scene of an accident. This is deceiving, however, because the lead investigator for NTSB, who, theoretically, could be referred to as the operational commander during the salvage and recovery phase, is a coordinating force directing events and tasking as necessary. Culturally, NTSB is different in that it is narrowly focused, has few organic resources other than people, and a very short chain of command that leads directly to the executive branch of government. This last aspect invites high-level political involvement thus increasing the scrutiny placed on the operational commander.

This difference in organizational culture has not been a showstopper in any DMDRO. The fact that USCG and USN crews have worked together in other operations and venues such as law enforcement operations and training availabilities provides a foundation of understanding. The NTSB is recognized as an agency that works outside of any local command structure and prefers not to participate in any type of joint command structure. For the USCG and USN this usually translates into a parallel C2 structure with interaction taking place at various levels and decisions being made by the lead operational commander following discussions at that level. This concept is viewed as a "unified command" under the Incident Command System. Rather than a single individual serving as the incident commander (a.k.a. operational commander) in multi-jurisdictional events, "the incident commander role is shared...Although this leadership by committee might seem to threaten unity of command, it is actually quite workable because of the cohesiveness provided by a common and immediate threat."[10] The merits of the ICS system will be discussed in more detail later. The point here, however, is that C2 is more challenging in DMDRO due to its tendency to bring large organizations into play with each organization having its own well-established C2 structure.

Rank Structure – Closely related to organizational culture is rank structure. This reference to rank structure does not refer to the pay-grade system, but to the rank structure that a particular agency or military activity uses to facilitate the accomplishment of a mission such as DMDRO. The C2 structure employed by the USN in the two cases under discussion has been staffed with as many as 60 people. This C2 structure with its accompanying array of higher-ranking officers (O5-O6) is juxtaposed to a USCG structure that fields a smaller (usually less than two dozen people) team with a majority of lower ranking junior officers (O2-O3) and senior enlisted personnel. For example,

when the Incident Command Post (ICP) for Egypt Air 990 was set up at Naval Station Newport, an O2 and E8 were sent to set it up and were followed shortly thereafter by the operational commander who was a USCG O6. Even after the operational commander arrived there was a staffing mismatch between the USCG, USN, and other organizations involved in the case. During the response the operational commander was the link to senior officials such as the USN Commodore (a senior Captain) and the NTSB chairman. The USCG O2 and E8 provided the coordination and tasking for the response alongside numerous USN personnel ranging from O2-O5.[11] The problem, as noted in a Lessons Learned, was that the junior officer assigned as the operations director had "too little horsepower in dealing with O5s/O6s from the Navy/NOAA as well as senior personnel from the NTSB, [Massachusetts Environmental] Police, and State Police."[12] Although this officer was fully qualified and able to function in this position, a USCG O5 was brought in as a substitute to level the playing field.

In the Alaska Airlines 261 case the situation evolved somewhat differently. The rank structure in the ICP at Naval Construction Battalion Center Port Hueneme was more closely matched with the operations director being a USCG O4. He was able to interface on a one-to-one basis with the operations directors or equivalents of the others services and agencies. The other functional areas of the ICP such as logistics and planning were also staffed by more senior USCG personnel due to the availability of such personnel from the parent command at Marine Safety Office/Group Los Angeles-Long Beach.

The point to be made here is not that there must be absolutely equivalent or even similar ranks when dealing with one another in DMDRO. Experience and ability to perform the job should be the driving factors behind the assignment of personnel in such situations. However, in unfamiliar settings and under emergency conditions people tend

to equate certain rank levels with their own preconceived notion of organizational responsibility. When viewed in light of the organizational culture of the USCG mentioned above, very capable junior people in the USCG, who would otherwise be in the decision-making loop, are set aside. This results in the people who normally run operations in the USCG on a daily basis, the E6s-O3s, being assigned to support roles and more senior officers being assigned to unfamiliar positions. Although operational success has not been compromised as a result of this practice, it does promote a certain degree of inefficiency when positions are filled based on rank instead of ability.

On the other hand, the idea of using more senior personnel to manage DMDRO is not without some advantages. Probably the most compelling reason to have more senior people assigned to key positions in the ICP is the decision-making *authority* required during DMDRO. With mid to senior level officers a certain degree of accountability is inherent with every decision made. This becomes a factor when the decisions being made have a great impact on the success of the mission and the political fall-out should it fail.

Management Systems – As stated previously, the Incident Command System has been adopted by the USCG for management of contingency operations.[13] ICS includes four basic sections or staff elements: operations, planning, logistics, and finance/administration. It was used to effectively coordinate efforts of USCG and civilian assets in both of the cases mentioned. In contrast, the USN employed the general staff system, which is common throughout the Department of Defense (DOD) and includes at least six staff elements: (N-1) personnel and administration; (N-2) intelligence; (N-3) operations; (N-4) logistics; (N-5) plans and policy; and (N-6) command, control, communications, and computers (C4). "It took three days [in the

Egypt Air 990 case] to translate the ICS organization into the Navy N-staff organization."[14] While the ICS system was more effective in the Alaska Airlines 261 case, the operational commander noted that a better "understanding of the N-Staff equivalents of ICS for dealing with DOD" was needed.[15] This incompatibility leads to confusion, inefficiency, and duplication of effort. In her paper, "Operational Command and Control of Federal Domestic Emergency Response Operations," CDR Sharon Richey, USCG, advocated the establishment of ICS as a national C2 emergency management system.[16] This may be appropriate as a management tool during incidents in which DOD forces do not participate. However, due to the complexity of DOD and the fact that the "staff" system that is currently being used is familiar and effective, it is unlikely that a system such as ICS with its requisite training requirements would be adopted. Some type of ICS/N-Staff interface is probably a more workable solution when DOD is involved in DMDRO.

Another management "systems" approach to addressing the C2 issue in DMDRO is the formation of a coordination group. During the Alaska Airlines 261 response a "Multi-Agency Coordination (MAC) Group" was hosted by the California Office of Emergency Services.[17] Representatives from the various federal, state, and local agencies involved met twice each day and acted as conduits between their respective organizations and the group. This was an effective management tool for information transfer; however, it provided no centralized C2 function. These management systems, ICS, N-Staff, and MAC have a common objective, which is to coordinate forces and keep the momentum of the response headed toward an acceptable conclusion. They also share one key element, which is the ability of involved parties to communicate with one another and see a common picture.

Communications – Command and control in DMDRO is significantly impacted by the ability of the operational commander and supporting players to communicate. This may appear axiomatic; however, due to the expansive operating area normally associated with DMDRO and long lines of operations, the operational commander has a more difficult time maintaining the "big picture." During Egypt Air 990 the Coast Guard Cutter SPENCER used the Global Command and Control System-Maritime (GCCS-M) to plan and track its on-scene commander duties and send daily updates to the operational commander via Over The Horizon Command Information Exchange System (OTCIXS).[18] The operational commander used this information in planning and tasking other units. With advances in computer technology emergency response agencies have recognized the potential uses of it in emergency management. E-Team Inc., a California company, has developed a web-based system that allows different agencies to basically plug into a response and immediately view the current status. It has been likened to a "great white board in the sky."[19] While the advantages to C2 of systems such as these are obvious, their availability is not universal even among USCG assets. This leaves voice communication as the default method of conveying pertinent real-time information.

Radio communication between the operational commander and assigned units was complicated in both of the subject cases by variations in equipment and procedures. Initially, in Egypt Air 990, a U.S. Air Force C-130 crew was designated on-scene commander. Due to the crew's lack of familiarity with maritime search and rescue as well as the aircraft's communications incompatibility with surface units they were relieved by a USCG HU-25 Falcon aircraft.[20] The crew of the USCG aircraft had the necessary training and experience to coordinate rescue efforts and the aircraft, like all USCG aircraft and vessels, had marine band VHF-FM radios, which enabled them to

communicate with surface units. U.S. Coast Guard vessels also add a secure voice capability to VHF-FM facilitating secure unit-to-unit communications. The USN vessels, on the other hand, do not have secure VHF-FM capability limiting its effectiveness in DMDRO.[21] The shore-based National Distress and Monitoring System maintained by the USCG is also not currently equipped to provide secure VHF-FM communications. Consequently, the operational commander is forced to communicate in "clear-voice." However, clear voice communication is the least preferred method of communicating during DMDRO due to the sensitive nature of the subject matter, i.e. disposition of human remains, condition of evidence, etc. Since VHF-FM is the normal mode of communication among commercial and private vessels and can be monitored by commercially available scanners, other methods are pursued.

High Frequency (HF) radios are also used for secure ship-to-ship communication during DMDRO. During Egypt Air 990, however, this was complicated by the incompatibility of keying material between the USCG and USN vessels. A "work around" was achieved by having keying material transferred from the USN vessels to the USCG vessels via small-boat.[22] Further complicating the use of HF is the lack of availability of compatible systems which can be easily transported to the Incident Command Post. While they are available in deployable command trailers, these often do not come with personnel trained to operate the radios.[23]

A third area of note is the use of cellular communications by virtually everyone involved in both Egypt Air 990 and Alaska Air 261. While this became an alternative to radio communications with deployed vessels and aircraft, the overwhelming volume quickly saturated the local cellular systems. Cellular providers added portable towers to handle the extra load to overcome this. It also added another dimension in that the

operational commander was forced to track cellular numbers, which often changed as individuals within organizations changed roles or were relieved. The limited range of cellular communications when trying to communicate with vessels at sea and the potential of eavesdropping by people with scanners also complicated their use. Eavesdropping on communications is a tactic used by some in the media to attempt to "scoop" other reporters. This became apparent in Alaska Airlines 261 when a "pinger" from the flight data recorder was located and it was reported on television prior to the NTSB being notified. Even with the problems noted here, cellular phone use has proven to be a viable communications tool for C2.

The problems identified with the communications factor of DMDRO should not be overlooked as many of them are continually repeated. Given the proper priority and supported by appropriate doctrine they could be corrected thus alleviating one obstacle to mission success. Identification of communications resources and planning for their employment by operational commanders would alleviate major problems and enhance the C2 function during DMDROs. As noted by the operational commander of Egypt Air 990, "Interoperability between agencies and services remains an issue to be resolved."[24]

Location – Proximity to naval bases has made it convenient to use them as staging sites in several DMDROs. The aforementioned problems notwithstanding, this actually facilitated C2 for the operational commander. Quick responses by both Naval Station Newport and Naval Construction Battalion Center Port Hueneme allowed the operational commanders to work from a secure facility where access and logistics could be managed with a high degree of reliability.[25] A major question to be answered for the operational commander is where the Incident Command Post would be established if the DMDRO were to occur some distance from a military base or even a port facility. Had any of the

planes mentioned in this paper stayed airborne for another 15 minutes or so the response to the cases would have been much more difficult to manage. Moving the location of the crash further out to sea or to a point along the coast that is less populated or accessible would greatly extend the lines of communications from the operational commander to the units on scene thus complicating logistics, jurisdiction, deployment time, site of the Incident Command Post, etc. This fact is not lost on the industry executives that have a stake in DMDRO. At a symposium held at the National Ocean Industries Association's 2000 Fall Meeting, participants, which included USCG personnel and oil industry representatives, location of the UCP [Unified or Incident Command Post] was determined to be "extremely important." According to this group "locations should be pre-determined, taking into account the proximity to the incident, access to resources in the area, and access to a pool of experienced response experts."[26] It would be time-consuming if not impossible to plan to a level of detail that coordinated the location of every possible contingency with a corresponding UCP. However, since each USCG operational commander is responsible for a defined geographic area, it would be prudent to plan for possible contingencies and identify potential sites for an ICP or UCP.

Stages – The fact that there are predictable if not distinct stages to every DMDRO should work to the advantage of the operational commander. Gaining an understanding of these stages, what the objective is in each one, and which agency has responsibility for achieving that objective will go far in ameliorating C2. In nearly every imaginable instance the USCG will be the lead agency at the beginning of DMDRO since the search for survivors will take precedence over other concerns. Ideally, when the DMDRO shifts into a salvage and evidence recovery phase, the operational commander should shift to the NTSB or senior USN representative as appropriate.

This did not occur in the Egypt Air 990 case as USCG personnel were asked to remain in a C2 role during the transition from search and rescue to salvage and recovery due to their familiarity with the situation and ability to supply personnel and resources.[27] In the Alaska Airlines 261 Lessons Learned summary the operational commander stated that, "While NTSB became the lead agency for the search and recovery phase, it focused primarily on the investigation aspects of operations [and]...the Coast Guard's role shifted to one of vessel traffic management, memorial service support, and safety and security zone enforcement."[28] These experiences suggest the lead agency may be the NTSB or FBI once the investigation phase has begun, but neither have personnel with the necessary experience to assume C2 in a maritime environment. In effect the USCG operational commander must shift from performing his C2 role with responsibility for both defining and achieving the objective to one in which the objective is defined by another agency and he is responsible only for achieving it.

These six factors, organizational culture, rank structure, systems, communications, locations, and stages offer one of several possible frameworks for analyzing C2 in DMDRO. Further, they provide a point of departure for a fuller examination of the subject to assist DMDRO participants in improving interoperability. They are not intended to be all-inclusive since there are a myriad of possible combinations of factors inherent in any disaster response.

Counter-arguments

Several possible counter-arguments could be offered to the notion that there is even a problem with C2 in DMDRO. Theoretically, these might include: (a) the problem of C2 in DMDRO is too insignificant to be concerned about; (b) due to the multi-

jurisdictional nature of DMDRO, it is too complex to try to resolve; or, (c) a federally mandated emergency management system will prevent C2 problems from occurring.

The first of these theoretical counter-arguments, C2 is too insignificant to be concerned about, should raise red flags with the operational commander. Since C2 is the nucleus of an operation, the "tie that binds" if you will, it is the single most important operational function. The "too insignificant" argument may also include elements such as the units and agencies involved will self-synchronize and somehow know automatically what objective they are striving to attain. Undoubtedly, the people who serve in the USCG, USN, NTSB, and emergency response agencies are very capable and can often discern the objective inherent in a given situation. However, when working in unfamiliar territory with unfamiliar players, even the best responders need guidance and coordination. Given the enormous complexity of DMDRO such as that discussed in this paper, C2 rises to the top as being vital to mission success. Another factor to add to this equation is that not all DMDRO will involve catastrophic plane crashes. In a situation such as a successful ditching at sea or a foundering cruise ship the operational commander will require a solid C2 function to ensure the best hope of rescuing survivors.

The second counter-argument, DMDRO is too complex due to its multi-jurisdictional nature, has been addressed to some degree by the Federal Memorandum of Understanding (MOU) developed following the TWA 800 crash. This was noted by the Alaska Airlines 261 operational commander who stated, "There were no "turf battles" between the various agencies as to who was in charge or who had jurisdiction over what…It is clear the MOU's placed into effect after TWA 800…are working."[29] Support for this counter-argument lies in the fact that DMDRO could occur virtually anywhere and therefore the combination of potential agencies that could be involved is limitless.

This argument is not without merit. However, this author believes the USCG's nationwide system of Groups and Marine Safety Offices lays the groundwork for flexible contingency planning, which should frame any response thereby reducing this "limitless" potential to a manageable size. Additionally, the recent creation of Joint Task Force – Civil Support (JTF-CS) under Commander in Chief (CINC), Joint Forces Command, establishes an active duty DOD CINC with domestic emergency response authority.[30] Although this is currently limited to consequence management during a WMD attack, the role of JTF-CS could be expanded to include responsibility for coordination during DMDRO.

The third counter-argument that could be offered is that a federally mandated emergency management system would prevent C2 problems from occurring. Having a common system of management such as ICS would facilitate the integration of each agency into the response organization as the situation evolved. As previously mentioned, however, this author believes this limits the purview of C2 to a management system and fails to account for many other factors affecting C2 in DMDRO.

Conclusions

Effective command and control in DMDRO relies upon the notion that each agency involved is working toward a common objective. The multi-stage nature of such events, however, implies that each stage has its own intermediate objective for which a particular agency is responsible. It is this change in responsibility and the accompanying change in jurisdiction that often complicates DMDRO. This concept that is normal in DMDRO or any other civil emergency is counter to the traditional military approach in which a single operational commander has overall responsibility for the attainment of the objective and, therefore, maintains his dominant C2 position throughout the operation.

Joint Pub 3-07, Joint Doctrine for Military Operations Other Than War (MOOTW), states, "No single C2 option works best for all MOOTW. JFCs and their subordinates should be flexible in modifying standard arrangements to meet specific requirements of each situation and promote unity of effort."[31] This flexibility tempered with contingency planning is the key to successful DMDRO. Domestic Maritime Disaster Response Operations are complex by their very nature. The operational commander who plans for and develops an understanding of the various factors affecting command and control in such operations will be more likely to achieve mission success.

Recommendations

Based on the analysis presented in this paper there are seven areas for improvement. First, more USCG Groups/Districts/Area Operations Staffs should be trained in ICS procedures. Since the vast majority of emergency response agencies are effectively using it nationwide all branches of the USCG will be expected to be familiar with its procedures. It may not be a perfect fit for DMDRO, but it works and it is better than the ad hoc arrangement that arises in a major disaster.

Second, an ICS to N-Staff interface should be developed that allows both civilian and military personnel to quickly identify their counterparts and what they can expect from or what they need to provide to that person when a shift in lead agency occurs.

Third, technology should be implemented to enable all units involved in DMDRO to communicate in a secure mode with the operational commander and provide real-time updates. Since all USN vessels and most larger USCG cutters are equipped with secure satellite communications, the solution may be to provide this capability to all vessels participating in DMDRO.

Fourth, all USCG Group commands should identify potential sites for an Incident Command Post within their area of responsibility. This could include military bases, police or fire department headquarters, harbor patrol offices, port authority buildings, etc. Particular attention should be paid to the ability of a facility to support maritime operations.[32]

Fifth, through exercises and/or informal meetings operational commanders should identify potential players in a DMDRO, what their capabilities are, how their chain of command functions, etc. The relationships established with local and regional organizations in the regional CG Commander's "most likely" threat scenarios are reasonably going to be the same players that will emerge in the larger event.[33] (Note: Since USCG Groups tend to cover broad geographic areas, these factors could change depending on the location of an incident within the area of responsibility so attention should be paid to how the various agencies interact as the venue shifts.)

Sixth, the JFCOM CINC should, through JTF-CS, develop contingency plans for DMDRO addressing the concerns and proposals listed throughout this paper. The USCG should be included as a major, if not the lead, player in all planning related to DMDRO.

Seventh, the Egypt Air 990 operational commander's recommendation of a joint USCG/USN lessons learned for all DMDRO should be implemented. NWDC should be tasked with publication of Joint Tactics, Techniques, and Procedures (JTTP) for DMDRO.[34]

Follow-On Considerations

This paper focused on the issue of command and control in maritime disaster response. In the course of this author's research several tangential issues were discovered. As the term "homeland defense" has become a popular phrase of late due to

the threat to our national sovereignty from drug smugglers, illegal immigrants, terrorists, etc., there is a definite link between the response to these threats and the response to maritime disasters. This link is established because nearly all the agencies, with the possible exception of NTSB, that have responsibility for countering these threats are also the same agencies that will respond to a maritime disaster. Consequently, it would be prudent to combine planning and preparation efforts and avoid the duplication of effort and loss of connectivity that would result from the establishment of a narrowly focused response organization.

Due to its role as the lead agency for domestic counter-terrorism, the FBI established the National Domestic Preparedness Office (NDPO), which serve as a coordinating body for preparedness programs. While its main focus is crisis and consequence management surrounding weapons of mass destruction, its very name and makeup implies that it could serve broader interests.[35] There is also discussion about forming a new cabinet level agency focused on homeland defense. Combining the resources, personnel, and planning efforts that will inevitably flow out of these discussions with the current efforts underway at NDPO would appear to make good fiscal and practical sense. This is a good opportunity for the federal government to demonstrate that it is capable of using its vast resources to address a broad issue and avoid the piecemeal approach that has so often resulted in multiple federal agencies with overlapping jurisdiction and responsibility. There is benefit in having one agency exercise oversight in all federal disaster response operations whether they occur in the maritime environment or over land.

Notes

[1]Public Law, U.S. Code, Title 42, sec. 5121 (1988).

[2]James F. Miskel, "Observations on the Role of the Military in Disaster Relief," Naval War College Review, (Winter 1996): 109.

[3]Scott R. Taylor, Amy M. Rowe, Brian M. Lewis, "Consequence Management – In Need of a Timeout," Joint Forces Quarterly, (Summer 1999): 81.

[4]Commander, First Coast Guard District (opr), "Navy Chaplains Assigned to the Coast Guard," Egypt Air Flight 990 Lessons Learned, Lessons Learned No. 20001206005, 25 January 2000, CGSAILS Database, <http://llintra.comdt.uscg.mil/retrievereports/ShowReport.asp?tnum=20001206093036> [21 December 2000].

[5]"Egypt Air Flight 990 Disaster," Egypt Air Flight 990 Lessons Learned.*

[6]Ibid.

[7]Some of the USN salvage personnel worked on both cases. Their knowledge and experience assisted the operational commander during the transition from search and rescue to salvage and recovery.

[8]The senior USCG person responding to a typical search and rescue case is an E-4 or E-5 who serves as the boat coxswain. The coxswain is in radio contact with an E-5 or an E-6 who then communicates through an O-3 or O-4 to the operational commander who is usually an O-6.

[9]"Command and Control," Egypt Air Flight 990 Lessons Learned.*

[10]Alan L. Brown, "Jointness Begins at Home—Responding to Domestic Incidents," Joint Forces Quarterly, (Spring 1999): 106.

[11]QMCS David Wentworth, Senior Controller USCG Group Woods Hole Massachusetts, interview by author, 21 December 2000, Woods Hole, MA.

[12]"Military Rank Structure in ICS Structure," Egypt Air Flight 990 Lessons Learned.*

[13]Sharon K. Richey, "Operational Command and Control of Federal Domestic Emergency Response Operations," (Unpublished Research Paper, U. S. Naval War College, Newport, RI: 2000), 12.

[14]"Egypt Air Flight 990 Disaster," Egypt Air Flight 990 Lessons Learned.*

[15]Commanding Officer, Coast Guard MSO/Group Los Angeles-Long Beach, "Alaska Airlines Flight 261 Crash After-Action Report," 28 February 2000, 2.

[16]Richey, 24.

[17]Commanding Officer, Coast Guard MSO/Group Los Angeles-Long Beach, 2.

[18]"Egypt Air Flight 990 GCCS-M Use," Egypt Air Flight 990 Lessons Learned.*

[19]Karen Kaplan, "Canoga Park Firm Will Manage Web-Based Information System for Crisis Control at 2002 Winter Games," Los Angeles Times, 11 December 2000, Lexis-Nexis, Los Angeles, CA: Lexis-Nexis, (6 January 2001).

[20]"USAF as On Scene Commander," Egypt Air Flight 990 Lessons Learned.*

[21]"Coast Guard – Navy Communications," Egypt Air Flight 990 Lessons Learned.*

[22]Ibid.

[23]"Providing Personnel in Addition to Hardware," Egypt Air Flight 990 Lessons Learned.*

[24]"Egypt Air Flight 990 Disaster," Egypt Air Flight 990 Lessons Learned.*

[25]"Egypt Air Flight 990 Disaster," Egypt Air Flight 990 Lessons Learned.* and Commanding Officer, Coast Guard MSO/Group Los Angeles-Long Beach, 6.

[26]NOIA Public Affairs Staff, "Strategizing for the Unanticipated," Offshore, December 2000, Lexis-Nexis, Washington, D.C.: PennWell Publishing Co., (6 January 2001).

[27]"Egypt Air Flight 990 Disaster," Egypt Air Flight 990 Lessons Learned.*

[28]Commanding Officer, Coast Guard MSO/Group Los Angeles-Long Beach, 1.

[29]Commanding Officer, Coast Guard MSO/Group Los Angeles-Long Beach, 5.

[30]Commander, Joint Forces Command, "Our Mission," Joint Task Force Civil Support, <http://www.jfcom.mil/jtfcs/main.html> (26 January 2001).

[31]U.S. Joint Chiefs of Staff, Joint Doctrine for Military Operations Other Than War (Joint Pub 3-07), Washington, D.C.: 16 June 1997.

[32]Commanding Officer, Coast Guard MSO/Group Los Angeles-Long Beach, 6.

[33]"ICSs, MSO, OPS & Agencies partnership in ICS," Egypt Air Flight 990 Lessons Learned.*

[34]"OSC Access to Lessons Learned," Egypt Air Flight 990 Lessons Learned.*

[35]Dale Watson, "Statement," U.S. Congress, House, Subcommittee on Oversight, Investigation, and Emergency Management, The FBI's Role in Support of Domestic Preparedness, Committee on Transportation and Infrastructure, 4 May 2000.

*Note: Remainder of cite is same for all Egypt Air 990 Lessons Learned.

Bibliography

Alberts, David S. and Hayes, Richard. Command Arrangements for Peace Operations. Washington, D.C.: National Defense University Press, 1995.

Bleyer, Bill. "Nobody Could Survive This." U. S. Naval Institute Proceedings (September 1996): 29-30.

Brown Alan L. "Jointness Begins at Home—Responding to Domestic Incidents." Joint Forces Quarterly. (Spring 1999): 106-111.

Cholo, Ana Beatriz. "Crisis Response Plan Signed." Los Angeles Times. 25 July 2000. Lexis-Nexis. Los Angeles, CA: Lexis-Nexis. (6 January 2001).

Commander, Coast Guard Group Woods Hole. "JFK Jr. – Plane Crash Lessons Learned." Woods Hole, MA: Undated.

Commander, First Coast Guard District (opr). Egypt Air Flight 990 Lessons Learned, Lessons Learned No. 20001206005, 25 January 2000, CGSAILS Database, <http://llintra.comdt.uscg.mil/retrievereports/> [21 December 2000].

Commander, Joint Forces Command. "Our Mission." Joint Task Force Civil Support. <http://www.jfcom.mil/jtfcs/main.html> (26 January 2001).

Commanding Officer, Coast Guard MSO/Group Los Angeles-Long Beach. "Alaska Airlines Flight 261 Crash After-Action Report." Long Beach, CA: 28 February 2000.

Hamblet, William P. and Jerry G. Kline. "Interagency Cooperation: PDD 56 and Complex Contingency Operations." Joint Forces Quarterly. (Spring 2000): 92-97.

Kaplan, Karen. "Canoga Park Firm Will Manage Web-Based Information System for Crisis Control at 2002 Winter Games." Los Angeles Times. 11 December 2000. Lexis-Nexis. Los Angeles, CA: Lexis-Nexis. (6 January 2001).

Lord, Carnes. "Crisis (*Mis-*) Management." Joint Forces Quarterly (Summer 1999): 72-77.

Maddaloni, Chris. "After Major Calamities, the National Guard and FEMA Often Work Together to Pick Up the Pieces." National Guard (August 2000): 27-29.

McCord, Raymond S. and Thomas A. Schoene. "Forward...From Long Island." U. S. Naval Institute Proceedings (November 1998): 56-59.

Miskel, James F. "Observations on the Role of the Military in Disaster Relief." Naval War College Review, Winter 1996.

NOIA Public Affairs Staff. "Strategizing for the Unanticipated." Offshore. December 2000. Lexis-Nexis. Washington, D.C.: PennWell Publishing Co. (6 January 2001).

Richey, Sharon K. "Operational Command and Control of Federal Domestic Emergency Response Operations." Unpublished Research Paper, Naval War College, Newport, RI: 2000.

Siegel, Adam B., Linda S. Keefer, and Sandra L. Newett. An Examination of USMC Coordination Structures for Military Support to Civilian Authorities (MSCA) Operations. CNA 37-94-0007. Alexandria, VA: Center for Naval Analyses, 1994.

Smith, Karen D. Command and Coordination in Humanitarian Assistance Operations. CRM 95-165.10. Alexandria, VA: Center for Naval Analyses, 1996.

Taylor, Scott R., Amy M. Rowe, and Brian M. Lewis. "Consequence Management – In Need of a Timeout." Joint Forces Quarterly (Summer 1999): 78-85.

U. S. Coast Guard. "Crisis on the Coast, Federal On Scene Coordinator's Report and Assessment of M/V NEW CARISSA Oil Spill Response." Portland, OR: June 1999.

U. S. Coast Guard Marine Safety Office Honolulu Web Site, http://www.aloha.net/~msohono/factbook/ccdg.htm.

U. S. Coast Guard Office of Marine Environmental Protection Web Site, http://www.uscg.mil/hq/g-m/mor/Articles/OSC2.htm.

U. S. Congress. House. Committee on Transportation and Infrastructure. The FBI's Role in Support of Domestic Preparedness: Hearings before the Subcommittee on Oversight, Investigation, and Emergency Management. 4 May 2000.

U. S. Joint Chiefs of Staff. Joint Doctrine for Military Operations Other Than War (Joint Pub 3-07). Washington, D.C.: 16 June 1997.

Wentworth, D., Senior Controller USCG Group Woods Hole Massachusetts. Interview by author, 21 December 2000. Woods Hole, MA.